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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,491	12/05/2003	Juan Gutierrez Ibarra	A8618	7240

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
ROSENBERGER, RICHARD A	
ART UNIT	**PAPER NUMBER**
2877	

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,491	IBARRA ET AL.	
	Examiner	Art Unit	
	Richard A. Rosenberger	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 6-8, 11, 12, 19, 27, 31, 33, 35, 36, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Satake et al (US 5,487,472).

As in claims 1 and 12, the reference shows a method of, and apparatus for, emitting on illumination light (from 21) toward the outer surface of a plant product (a peanut or the like, see column 1, line 8). A substantially single wavelength (either 700 nm or 1,100 nm; column 4, lines 60 and 65) of a reflected light (column 6, lines 42-43) is detected (by detector 27 or 29), and at least one presence of damage (mold; column 5, lines 5-18) is determined (by "control unit", controller 50, shown in figure 5), and a category ("normal" or "abnormal") is assigned to the product based upon the determination. It is noted that the claims sets forth only that in the method a single wavelength reflection signal is detected; it does not set forth either that other wavelengths are not also detected, or that the determination is made solely on the basis a measurement at a single wavelength.

As in claims 6 and 31, the method sorts legumes (peanuts).

As in claims 7 and 27, the single wavelength detected by detector 29 can be 1,100 nm (column 5, line 65), which is "substantially in the range of 900 nm to 1100 nm.

As for claims 8 and 33; The reference teaches that the measurement is being made by measuring a decomposition product associated with the damage, which absorbs the light and thus reduces the mount of light being measured (column 5, lines 5-18); this absorption means that for at least one of the disclosed wavelengths the intensity of the reflected light will be less for the damaged area.

As in claims 11, 19, 35 and 36 the product is moved and the light detection (claim 11) and illumination (claim 36) is perpendicular to the direction of travel. The moving means of the reference is "a conveyor system" as in claim 19, and the system 60, directs the plant produce to one of two or more predetermined location based upon the damage category (clams 35).

As in clam 39, the first detector detects "an area of the first reflected light", that is some area (perhaps all) of the extent of the light falling on the detector plane is detected.

4. Claims 2, 13, 21, 22-26, 28, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al (US 5,487,472).

See above. As in claim 13, the Satake et al reference teaches a second detection path at a second wavelength; the first as either 700 nm or 1100 nm, the second at the other. The reference shows a single broadband light source which emits light a both wavelengths rather than two light sources as claimed in claim 13. It is known in the art that light of two different wavelengths can be provided by two different sources; see, for example, the two different light sources (34a and

34b), with filters (35a, 35b) in the other detection arrangement of the reference. It would have been obvious to use such two different light sources in the infrared detection means of the reference because, as shown by the reference, this is a known, and known to be useful, manner of providing light at appropriate wavelengths to such measuring apparatuses. It is noted that claim 13 does not require that the two light sources provide light of the same wavelength, nor that the two detectors detect at the same wavelength, but only each individually detect at a single wavelength, which the detectors of the reference do.

As in claims 2, 21, and 22, when, as above, separate light sources are provides with appropriate filters to provide the light needed for each test separately, each would emit light at a substantially single wavelength (either 700 nm or 1100 nm as needed for each test).

As in claims 23-26, the light source of the reference can be a broad spectrum lamp (claim 23) and, as discussed above, it would have been obvious to provide two lamps with appropriate filters (claims 23, 25). The reference discloses sensors, but does not disclose particular types of sensors; it would have been obvious to choose well-known and commercially available sensors, such as photodiode. Photodiodes as sensors are so well known official notice is sufficient. The choice of light sources is dictated by the need to provide the light of the appropriate wavelengths, and it would have been obvious to use any known and commercially available light sources which provide the needed wavelength, including well-known diode lasers (claims 24, 26). Diode lasers, and their use as light sources, as so well known official notice is sufficient.

As in claim 28, the wavelength of the second reflected light can be 1100 nm, which is "substantially within the range of 900nm to 1100 nm"; the claim does not distinguish the first

and second light paths in a manner which prevents the either of the two measurements of the reference to be either the first or second measurement of claim 13.

As in clam 43, the second detector detects "an area of the second reflected light", that is some area (perhaps all) of the extent of the light falling on the detector plane is detected.

5. Claims 1-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell et al (US 5,791,497), with Conway (US 5,164,795) for claim 13 and claims dependent therefrom, and with Aranda López et al (US 4,221,297) for claims 10, 15, 20, 51 and 58.

As in claims 1, 12, 44 and 52, Campbell et al shows a method and system which illuminates a plant product (fruit, in particular cranberries) with light in a particular wavelength or wavelength range and detects reflected light (column 4, lines 47-49) to assess damage (such as rot; column 1, lines 49-50) and assign a damage category thereto ad sort them based upon the damage category (column 4, lines 23-25).

The reference states, in column 6, lines 17-19 that "[t]he optical response of a specimen 16 to radiation of *a particular wavelength* or range of wavelengths can signify defects such as the presence of rot" [emphasis added], and in column 9, lines 43-45, discusses the use of a laser as the light source, noting one particular laser has "emission as about 904 nm". Thus the reference teaches or at least clearly suggests, and intends to teach or at least clearly suggest, the inclusion of the use of a single wavelength within the scope of its disclosure. Thus it would be, in light of the disclosure of the reference, at least obvious to "detect substantially a single wavelength" as claimed.

As for claim 13 and claims dependent therefrom, and for claims 10, 14, 20, 51 and 58, those in the art would have recognized that in a system such as shown by Campbell et al, that the camera can only see the top of the items being inspected, and that therefore the inspection is likely to be incomplete, because defects on the bottom of the berries will likely be missed, resulting in defective produce being passed through as acceptable. It would have been obvious therefore provide means to inspect the entire fruit; either by adding a second inspection station to view the fruit, as shown to be known by Conway (claims 13 and claims dependent therefrom), or by rotating the fruit under the camera, as shown to be known by Aranda López et al (claims 10, 15, 20, 51, and 57).

As for claims 2, 21, 22, 23, 25, 45, and 53 as discussed above Campbell et al discusses the use of lasers as the light source (column 9, line 43), which will emit light having substantially a single wavelength . As in claims 24 and 26, the use of diode lasers as a light source would have been obvious because they are known and commercially available light sources; the use of diode lasers as light sources is so well known official notice is sufficient.

As in claims 3, 32 and 48, the Campbell et al reference teaches detecting rot (column 6, line 20), which is a form of decay.

As in claims 16 and 18, the Campbell et al reference discusses using software to perform the analysis using a processor with memory (column 11, lines 26-28); doing so in a system controlled by software would have been obvious, as would using the processor to control the system; the use of software controlled systems to control and analyze data is so well known official notice is sufficient.

As in claims 4, 14, 18, and 52, the system of the Campbell et al reference produced and analyzes an image of the fruits. When, as discussed above, the obvious and known techniques for inspecting the entire surface of the objects are used, it would have been at least obvious to use the entire imaged results in the analysis, as in claim 10, 15, 17, 55 and 58.

As in claims 5 and 35, the Campbell et al reference sorts the objects, which at least clearly suggests separating the acceptable and unacceptable objects into separate locations.

As in claims 6, 31, and 47, the Campbell et al reference is directed to testing and sorting "fruits and vegetables" (column 10, lines 45-46).

As for claims 7, 27-30, 46 and 54, the Campbell et al reference teaches using light in the range of between about 750 to 1100 nm (column 7, line 40); the claimed wavelength (980 nm) and wavelength range (900 nm to 1100 nm) is within the disclosed wavelength range of the Campbell et al reference, and it would have been at least obvious to use select wavelengths within the disclosed range where the difference to be measured is "most pronounced" (column 7, lines 38-40).

As in claims 8, 33, 34 and 49, the defective fruits reflect less light than the acceptable ones (column 7, lines 26-31).

As in claim 9, it would have been obvious to make the determination rapidly in order to maintain throughput; note that the Campbell et al reference states that the image can be obtained "once a millisecond", which is much shorter than the claims 80 nm.

As in claims 11, 19, 36-38, 40-42, 50 and 56-57, the Campbell et al reference shows moving the objects and illuminating them with a line of light (see figure 2) substantially along a

line perpendicular to the travel direction, and viewing it along a line substantially perpendicular to the travel direction. The movement means is a conveyer system.

As in claims 39 and 43 the camera of Campbell et al detect an area of the reflected light.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A Rosenberger whose telephone number is (571) 272-2428. The examiner can normally be reached on Monday through Friday during the hours of 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. A. Rosenberger
13 September 2005

Richard A. Rosenberger
Primary Examiner